FOG250 6E8nE260

COMMERCE GENERAL ARCHITECTURE

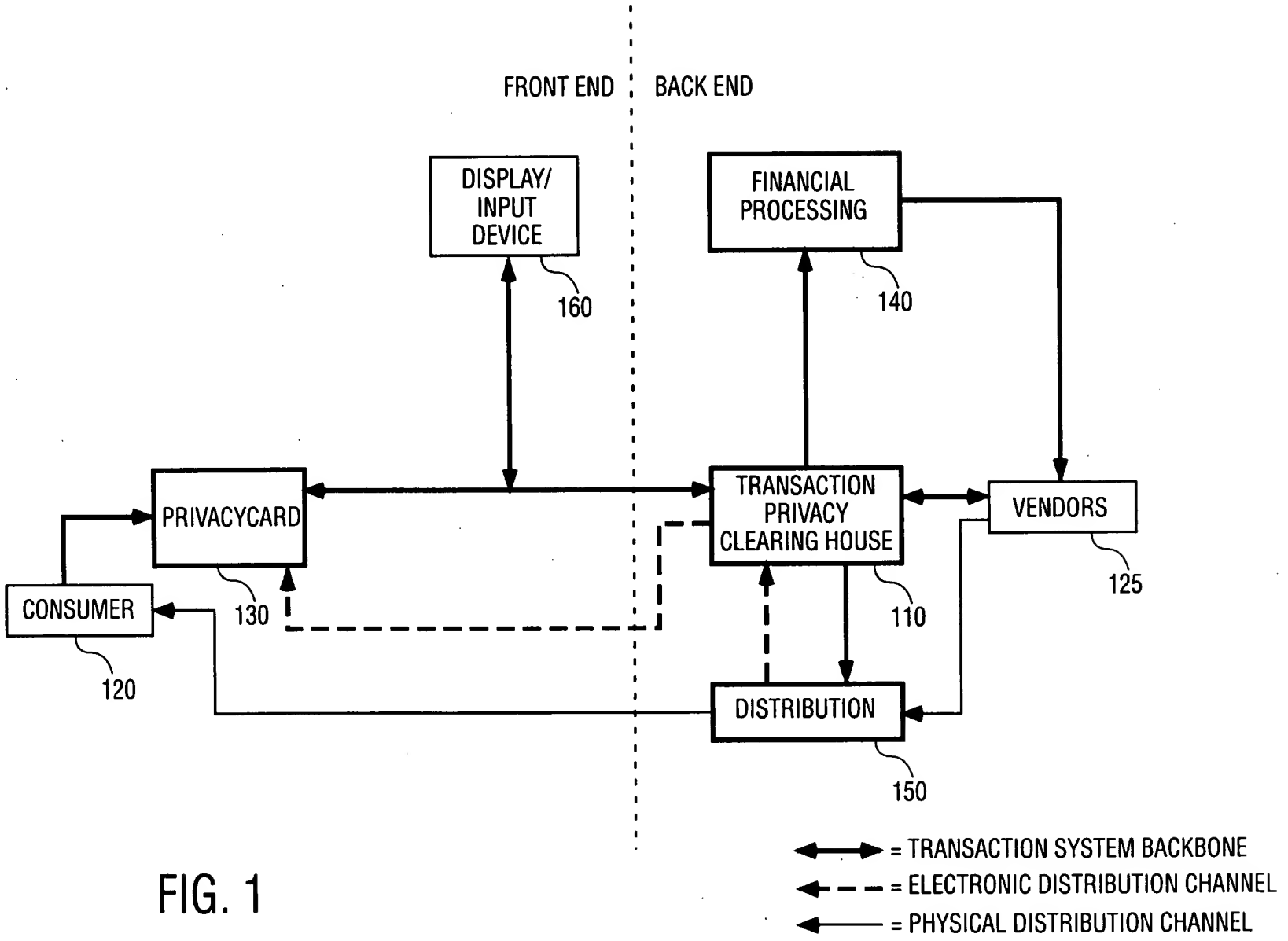


FIG. 1

T06250 "628nE260

COMMERCE GENERAL ARCHITECTURE - POS TERMINAL:

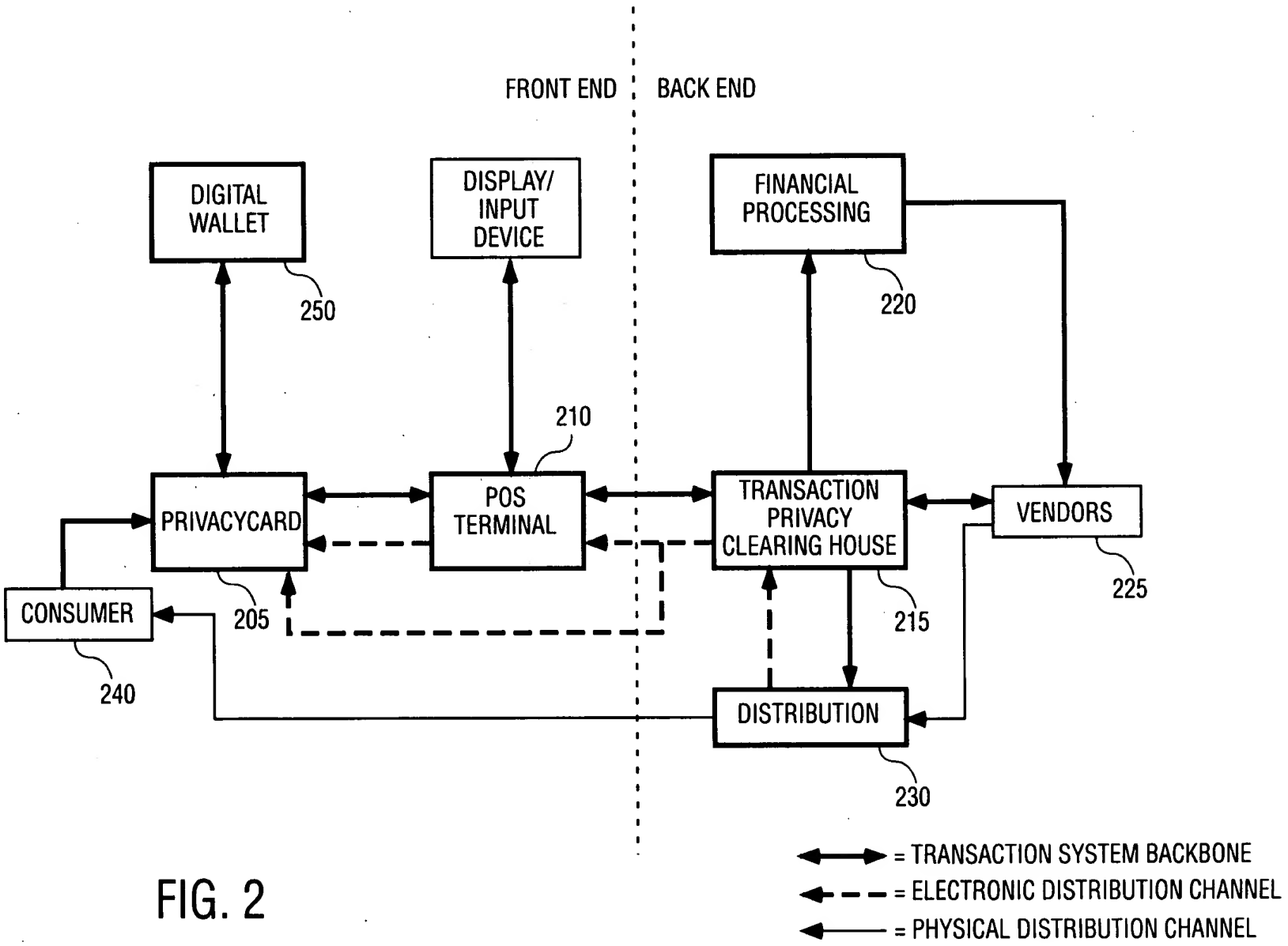


FIG. 2

FD6250 "6E8nE260

COMMERCE IN-HOME ENVIRONMENT

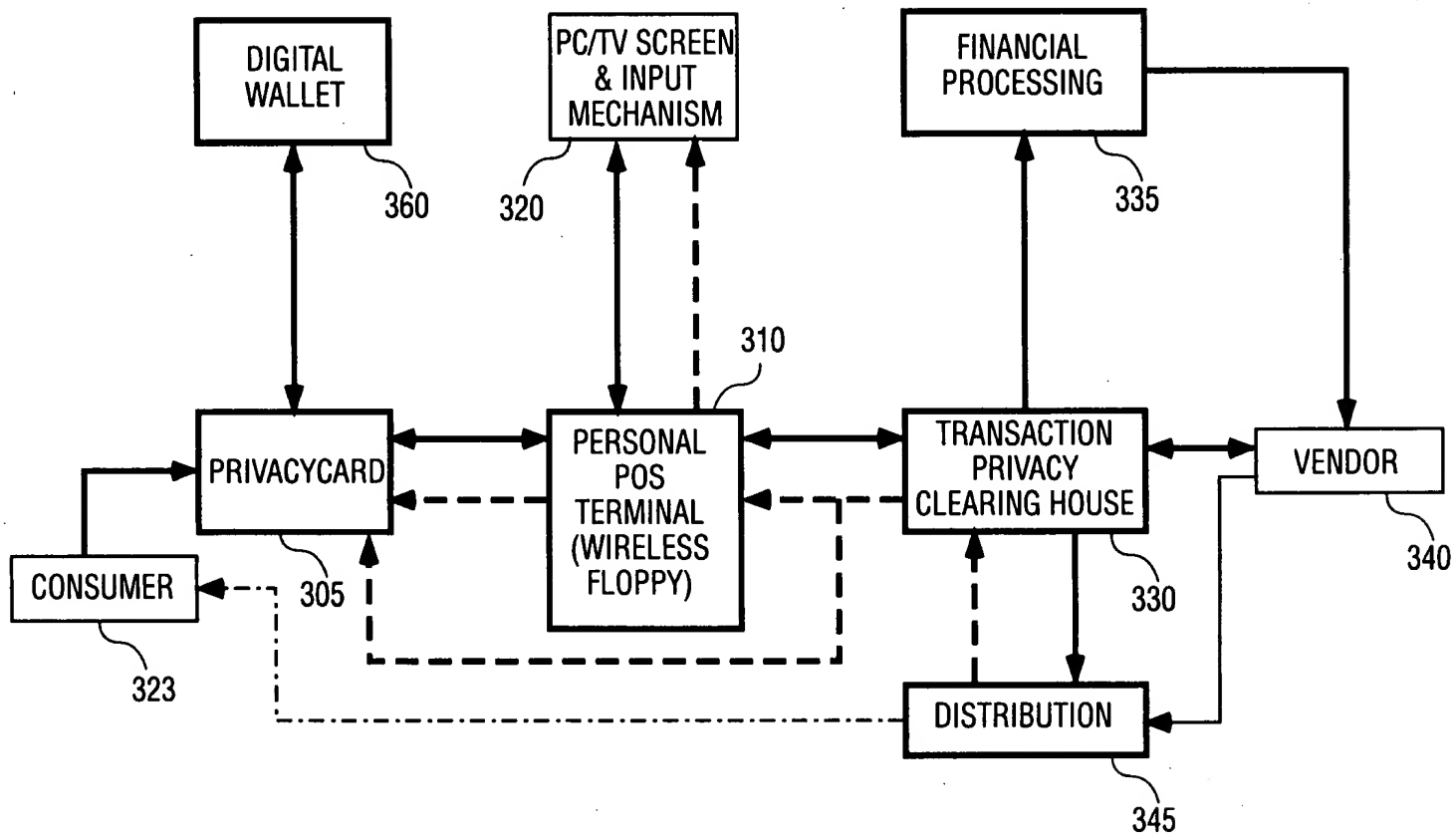


FIG. 3

T06250 "6E3nE260

IN-STORE RETAIL ENVIRONMENT

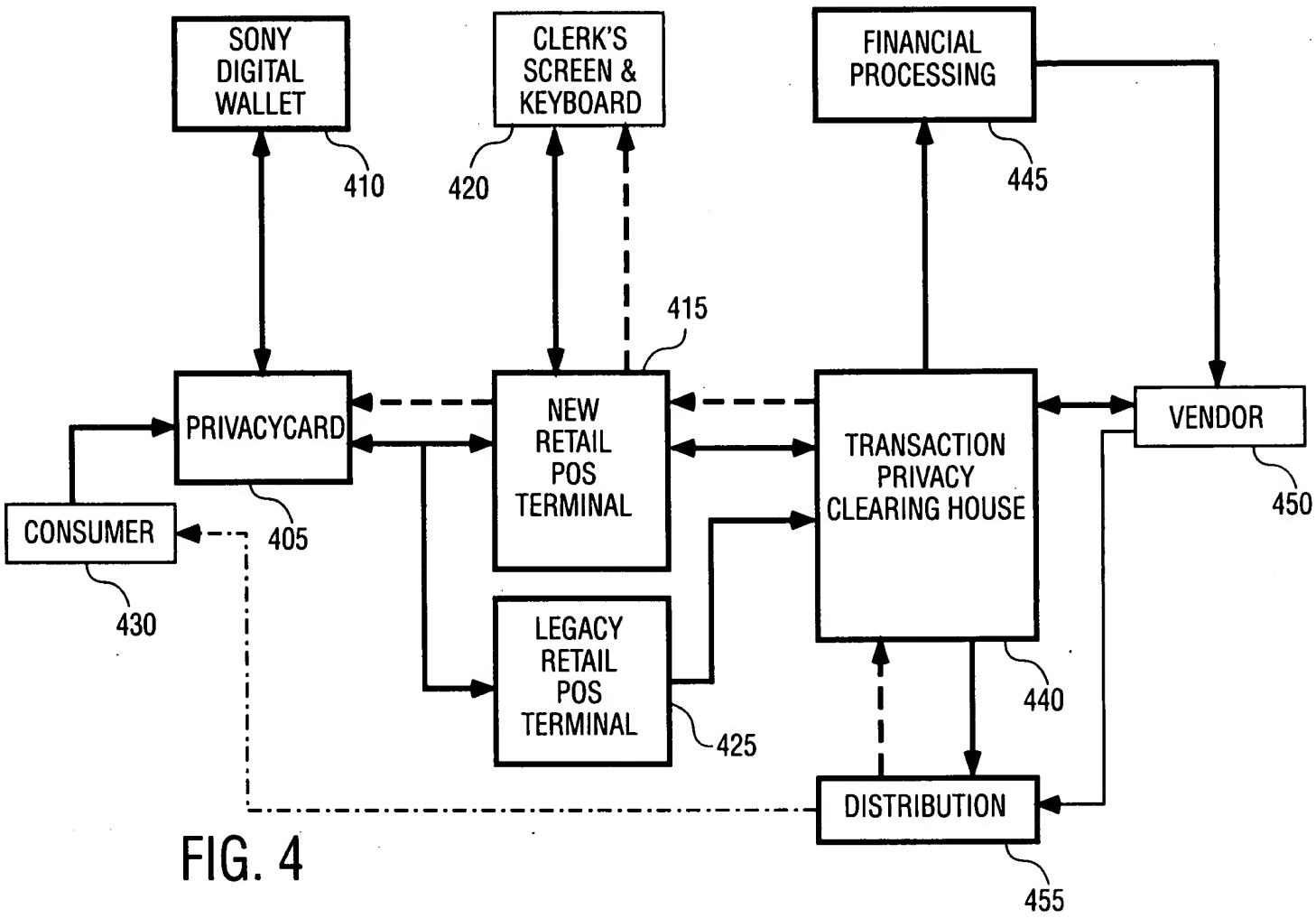
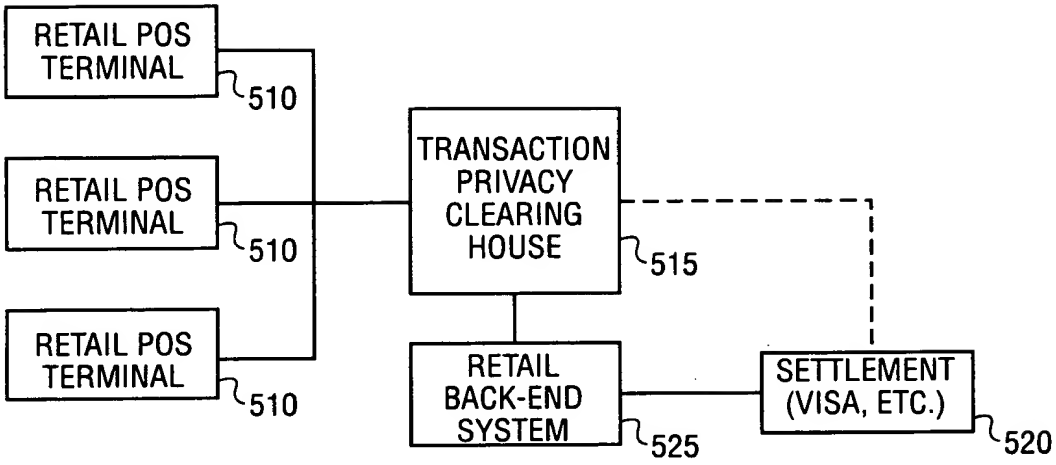
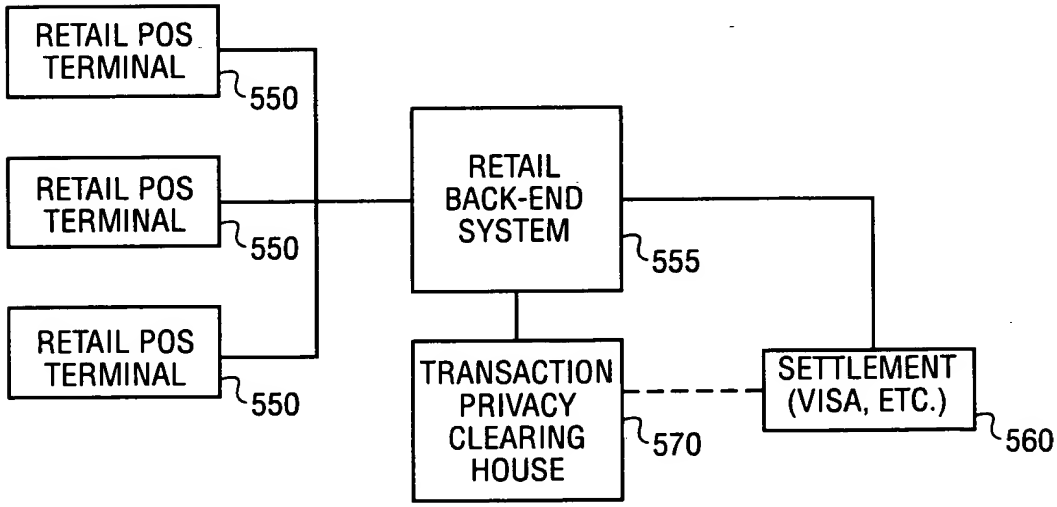


FIG. 4



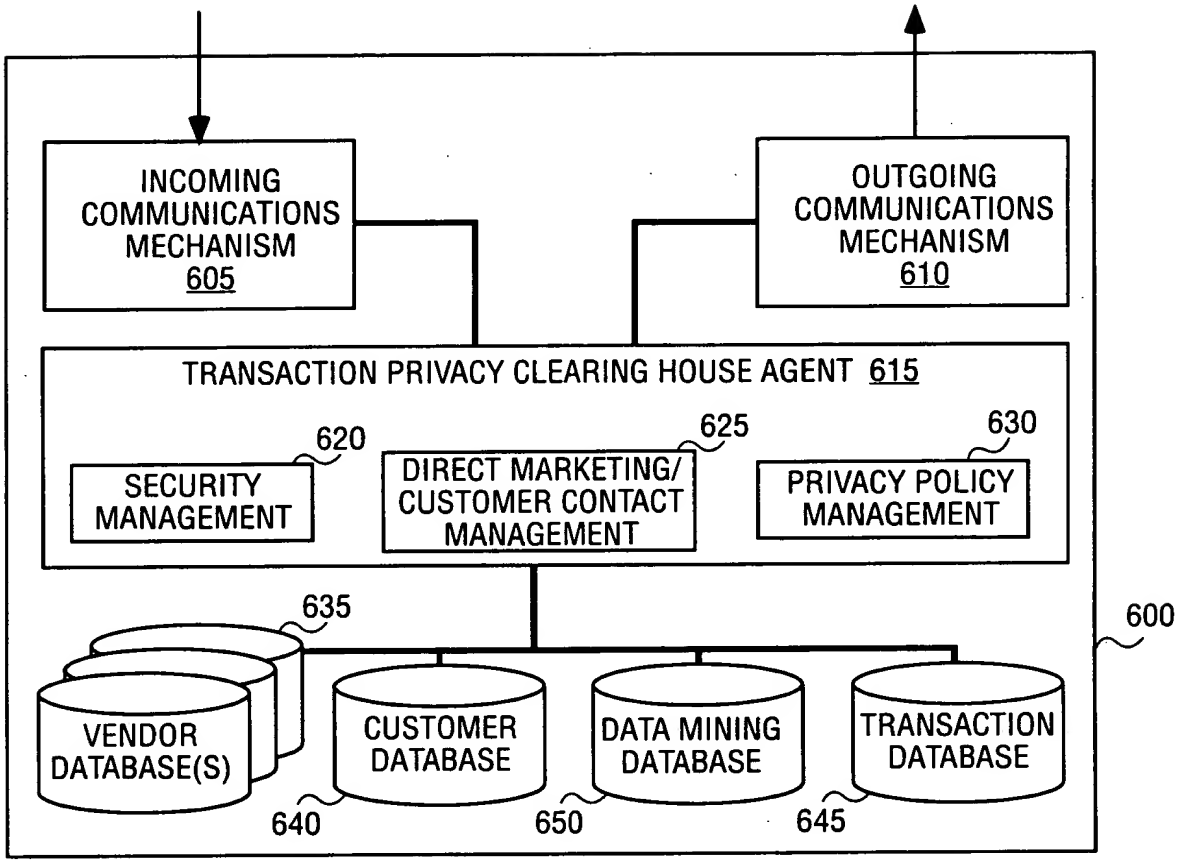
A RETAIL SYSTEM MODIFIED TO SUPPORT THE INTERACTION OF LEGACY POS TERMINAL WITH THE DIGITAL WALLET SYSTEM

FIG. 5A



AN ALTERNATIVE EMBODIMENT OF THE RETAIL SYSTEM MODIFIED TO SUPPORT THE INTERACTION OF LEGACY POS TERMINALS WITH THE DIGITAL WALLET SYSTEM

FIG. 5B



TRANSACTION PRIVACY CLEARING HOUSE: MAJOR COMPONENTS

FIG. 6

10025501.082402

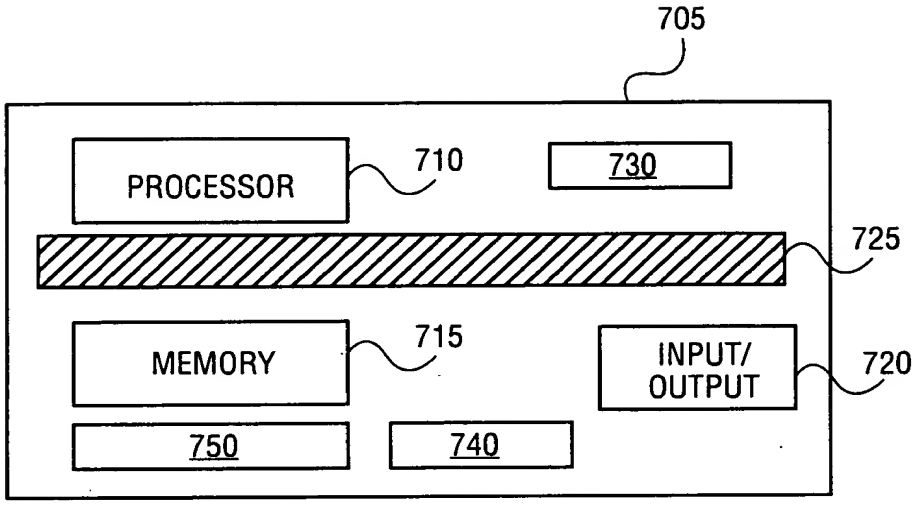


FIG. 7A

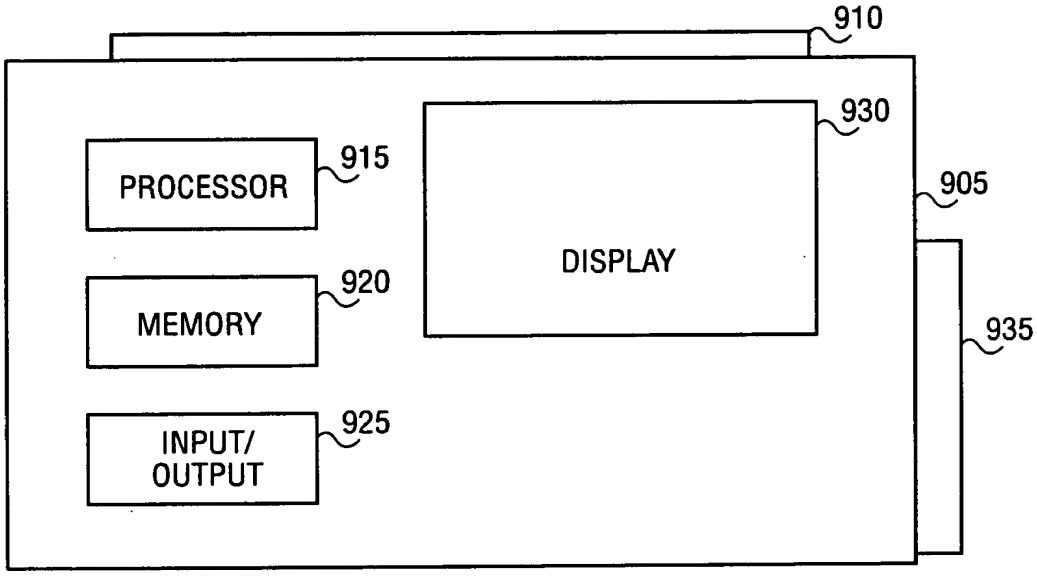


FIG. 9A

Docket: 62850-62826260

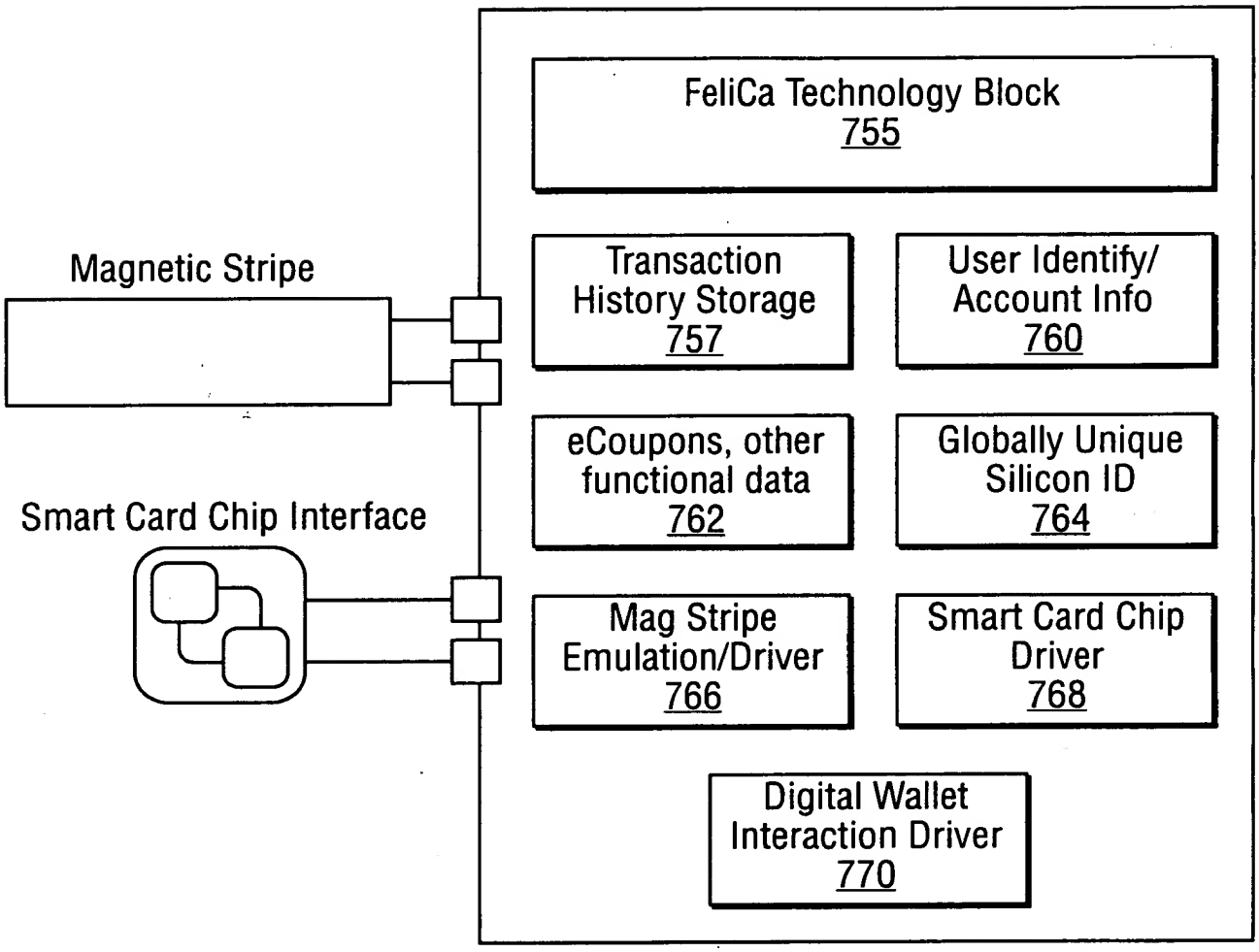


FIG. 7B

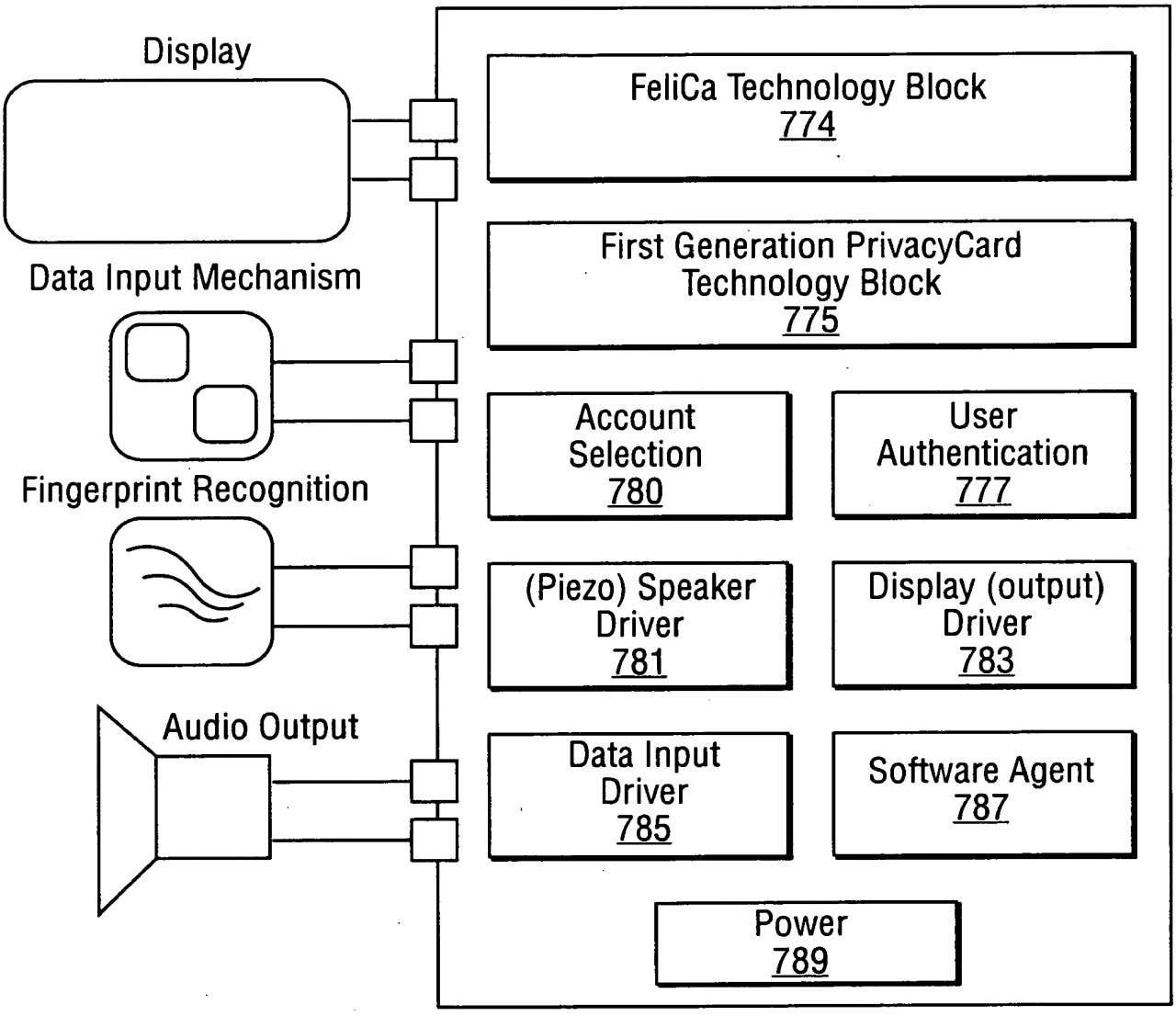
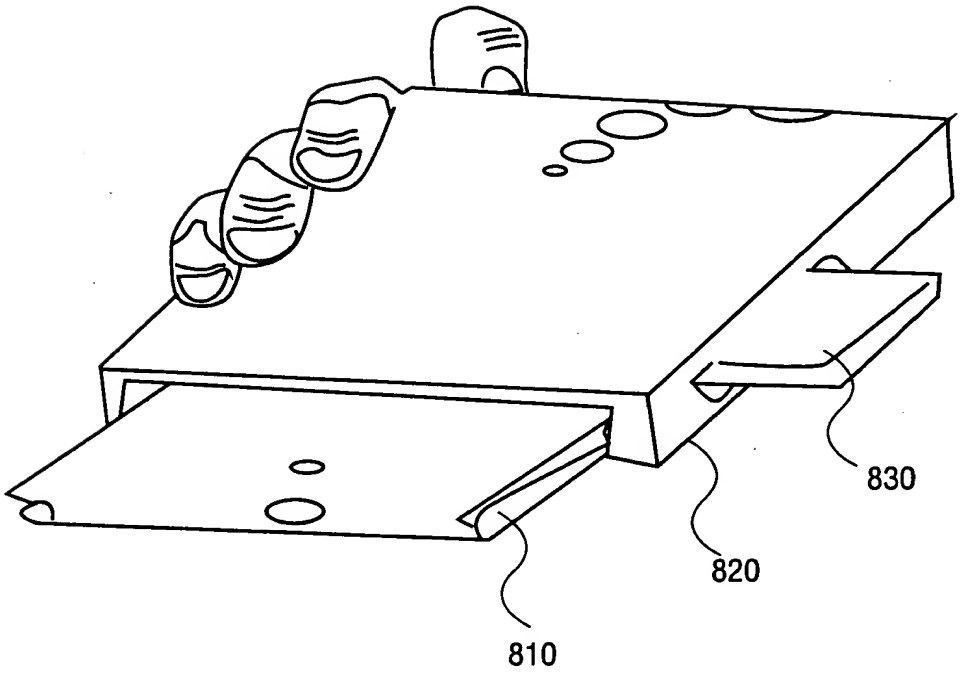

Display
Data Input Mechanism
Fingerprint Recognition
Audio Output
FeliCa Technology Block
774
First Generation PrivacyCard
Technology Block
775
Account
Selection
780
User
Authentication
777
(Piezo) Speaker
Driver
781
Display (output)
Driver
783
Data Input
Driver
785
Software Agent
787
Power
789

FIG. 7C



DIGITAL WALLET AND PRIVACY CARD

FIG. 8

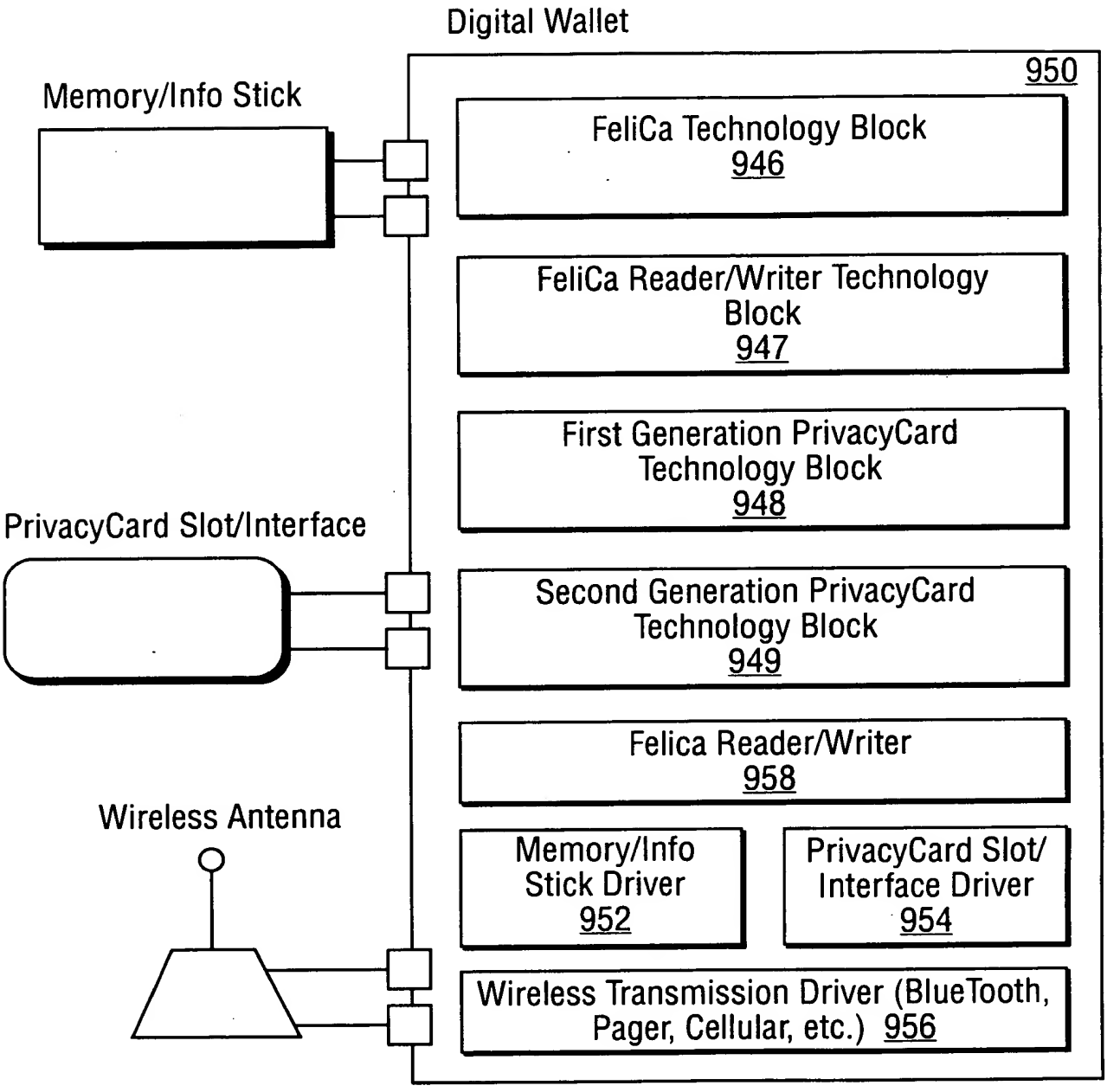
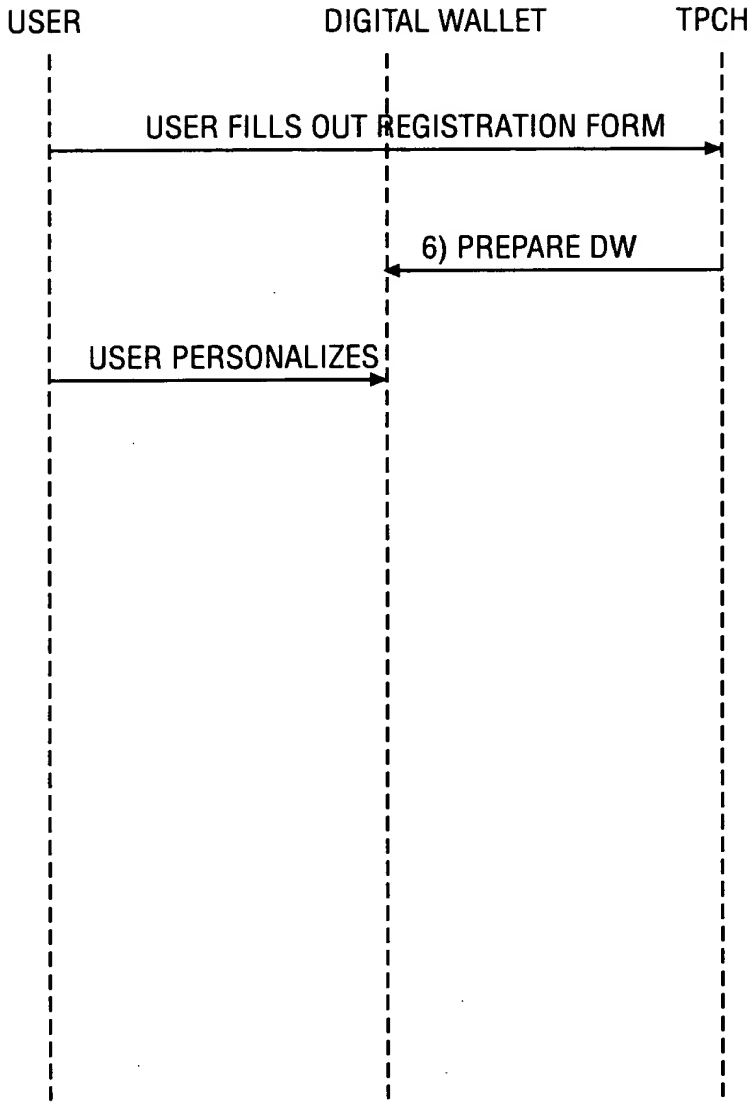

Digital Wallet
950
Memory/Info Stick
FeliCa Technology Block
946
FeliCa Reader/Writer Technology Block
947
First Generation PrivacyCard Technology Block
948
PrivacyCard Slot/Interface
Second Generation PrivacyCard Technology Block
949
Felica Reader/Writer
958
Wireless Antenna
Memory/Info Stick Driver
952
PrivacyCard Slot/ Interface Driver
954
Wireless Transmission Driver (BlueTooth, Pager, Cellular, etc.) 956

FIG. 9B

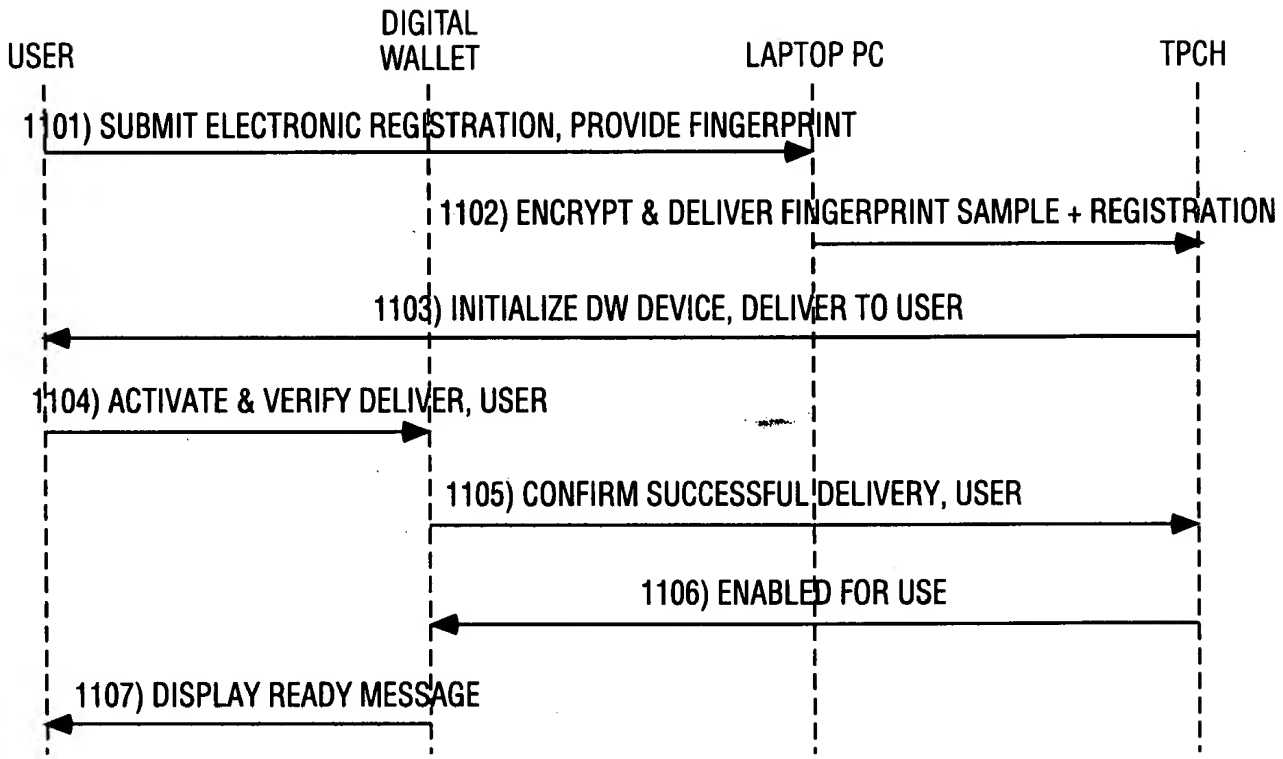
TD6250 "d28h2d0



SETUP OF DIGITAL WALLET

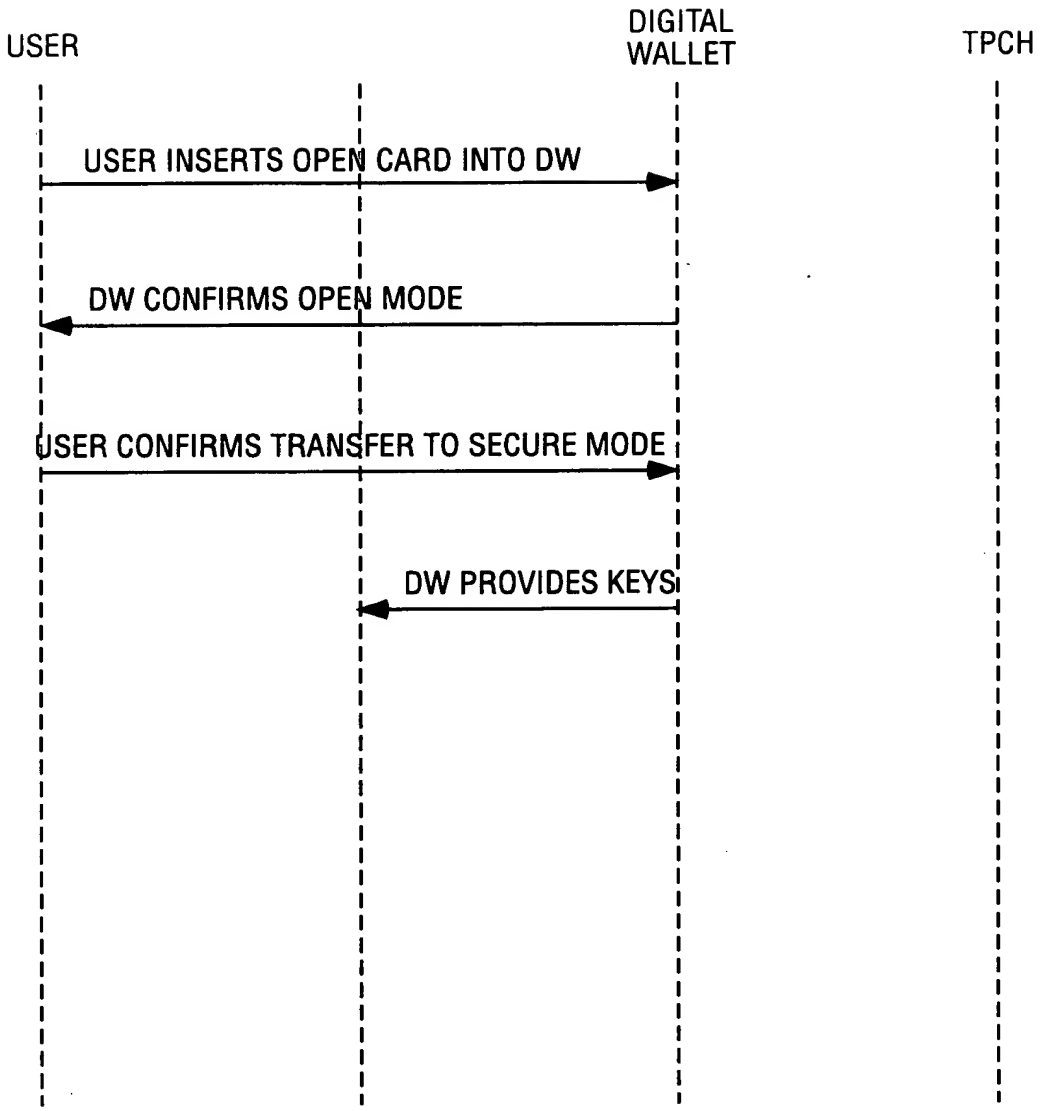
FIG. 10

T06250 "GE8nE260



DIGITAL WALLET SETUP
(ALTERNATIVE EMBODIMENT)

FIG. 11



CONVERSION OF CARD TO SECURE

FIG. 12

FOB250 "6EBHE260

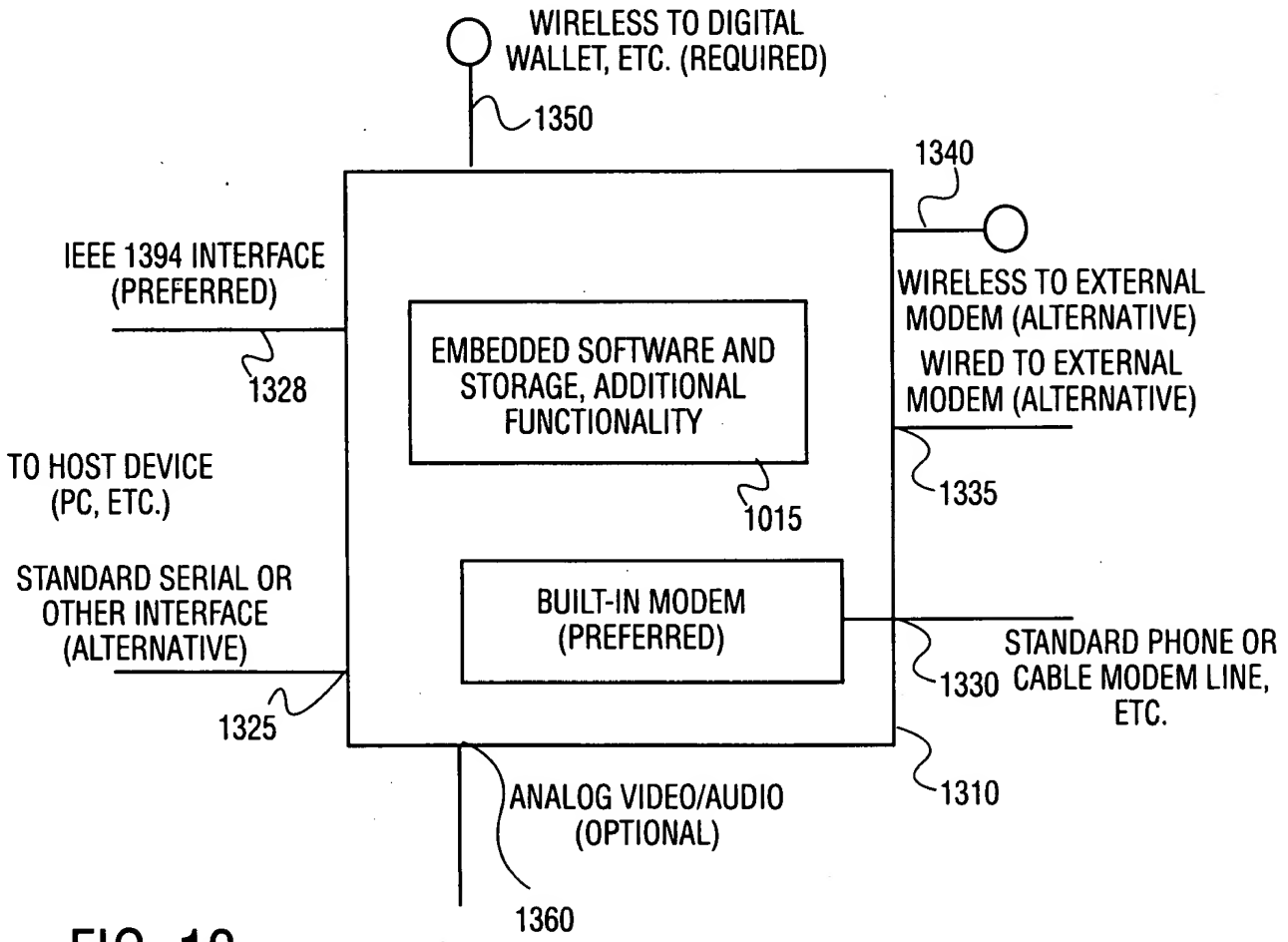


FIG. 13

F06250 6E8nE760

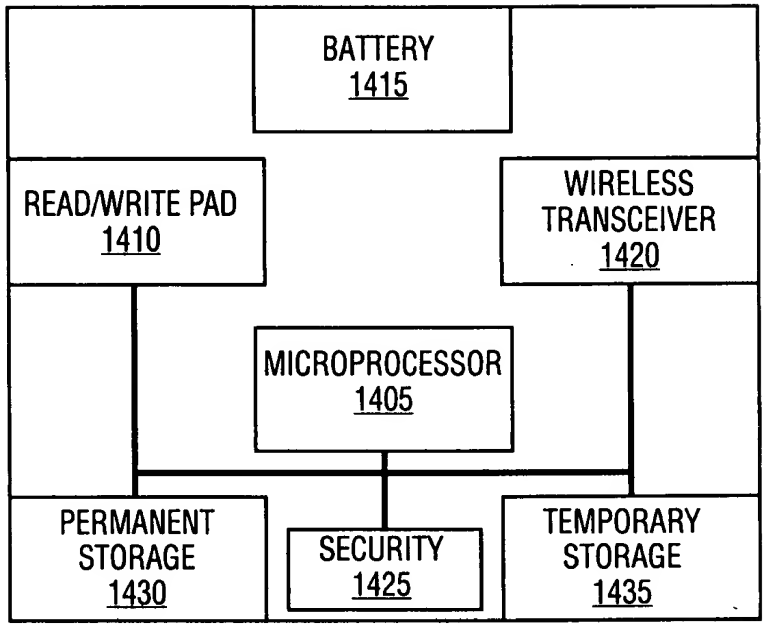


DIAGRAM OF THE MAJOR COMPONENTS OF THE PERSONAL POS, SHOWING THE DATA/ADDRESS BUS INTERCONNECT

FIG. 14

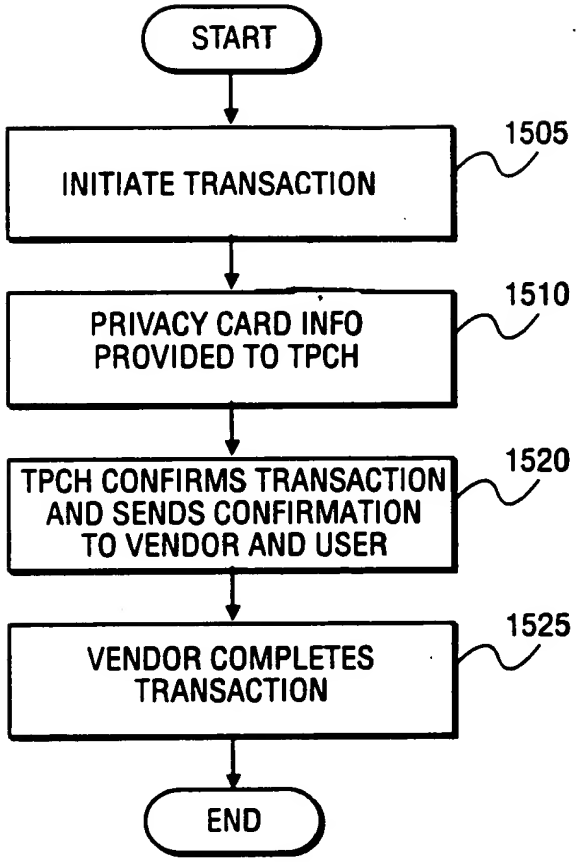

START
INITIATE TRANSACTION
1505
PRIVACY CARD INFO PROVIDED TO TPCH
1510
TPCH CONFIRMS TRANSACTION AND SENDS CONFIRMATION TO VENDOR AND USER
1520
VENDOR COMPLETES TRANSACTION
1525
END

FIG. 15

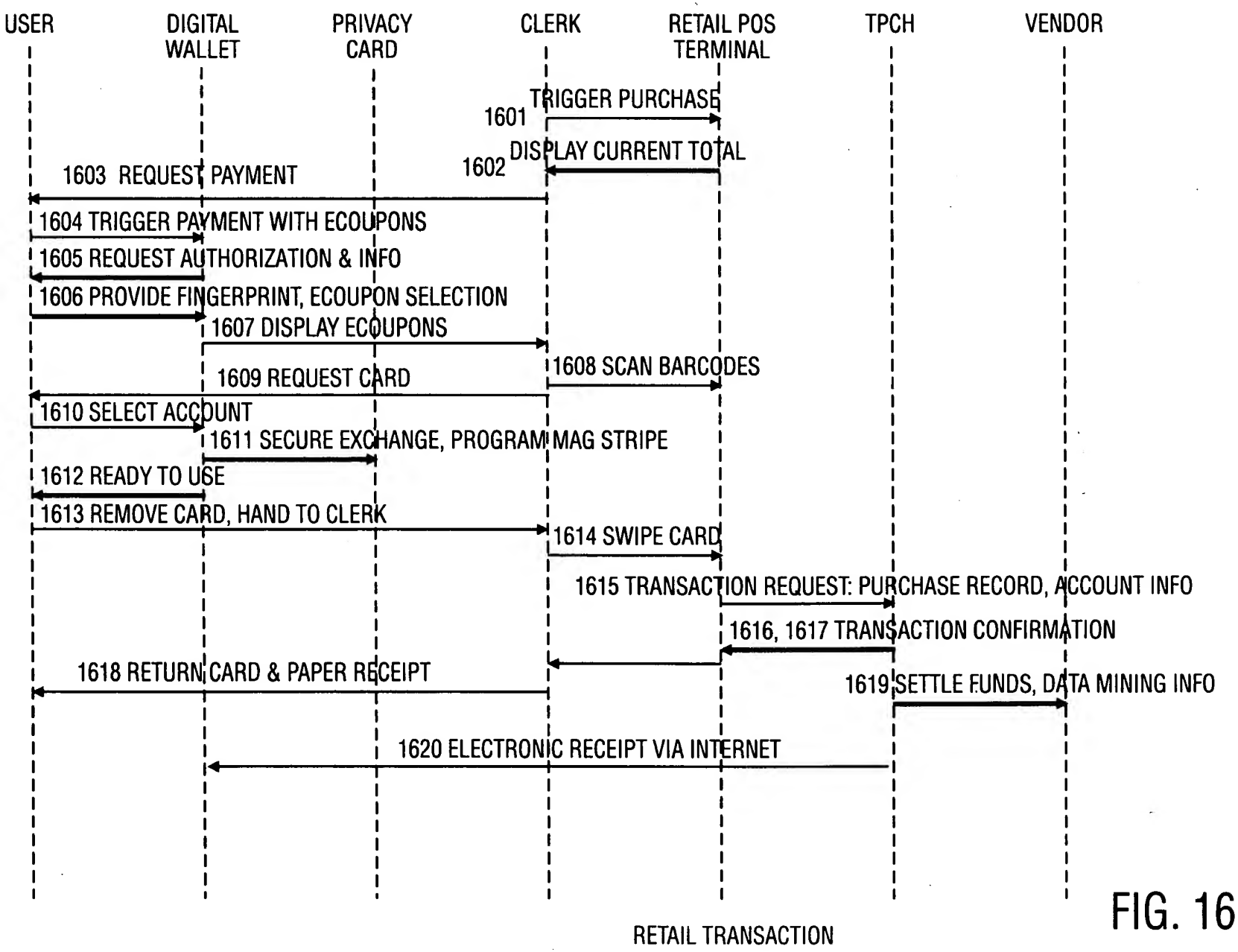

USER
DIGITAL WALLET
PRIVACY CARD
CLERK
RETAIL POS TERMINAL
TPCH
VENDOR
1601 TRIGGER PURCHASE
1602 DISPLAY CURRENT TOTAL
1603 REQUEST PAYMENT
1604 TRIGGER PAYMENT WITH ECOUPONS
1605 REQUEST AUTHORIZATION & INFO
1606 PROVIDE FINGERPRINT, ECOUPON SELECTION
1607 DISPLAY ECOUPONS
1608 SCAN BARCODES
1609 REQUEST CARD
1610 SELECT ACCOUNT
1611 SECURE EXCHANGE, PROGRAM MAG STRIPE
1612 READY TO USE
1613 REMOVE CARD, HAND TO CLERK
1614 SWIPE CARD
1615 TRANSACTION REQUEST: PURCHASE RECORD, ACCOUNT INFO
1616, 1617 TRANSACTION CONFIRMATION
1618 RETURN CARD & PAPER RECEIPT
1619 SETTLE FUNDS, DATA MINING INFO
1620 ELECTRONIC RECEIPT VIA INTERNET
RETAIL TRANSACTION

FIG. 16

TO6250 "62BAE760

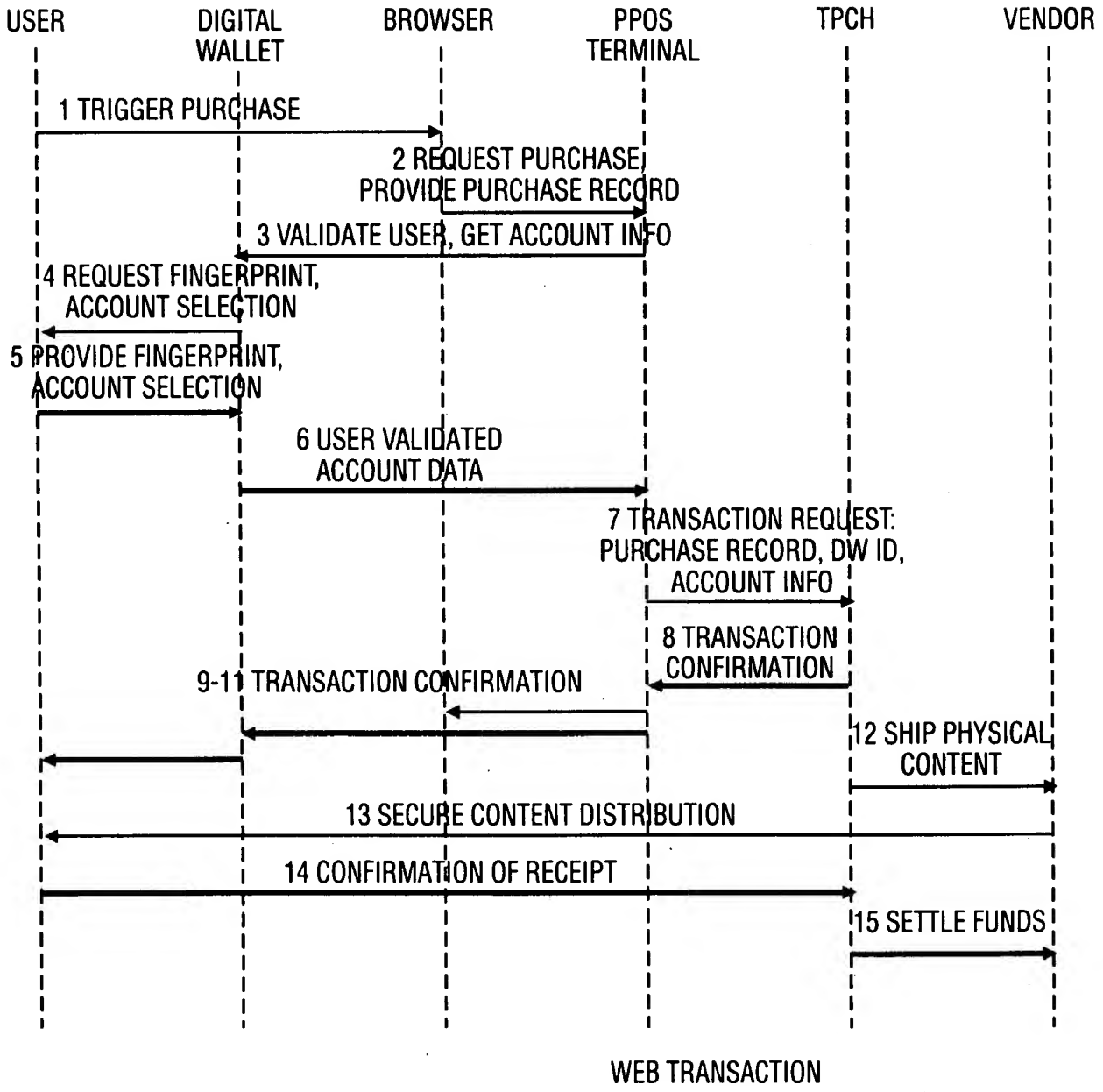


FIG. 17

FOB250 6EBHE260

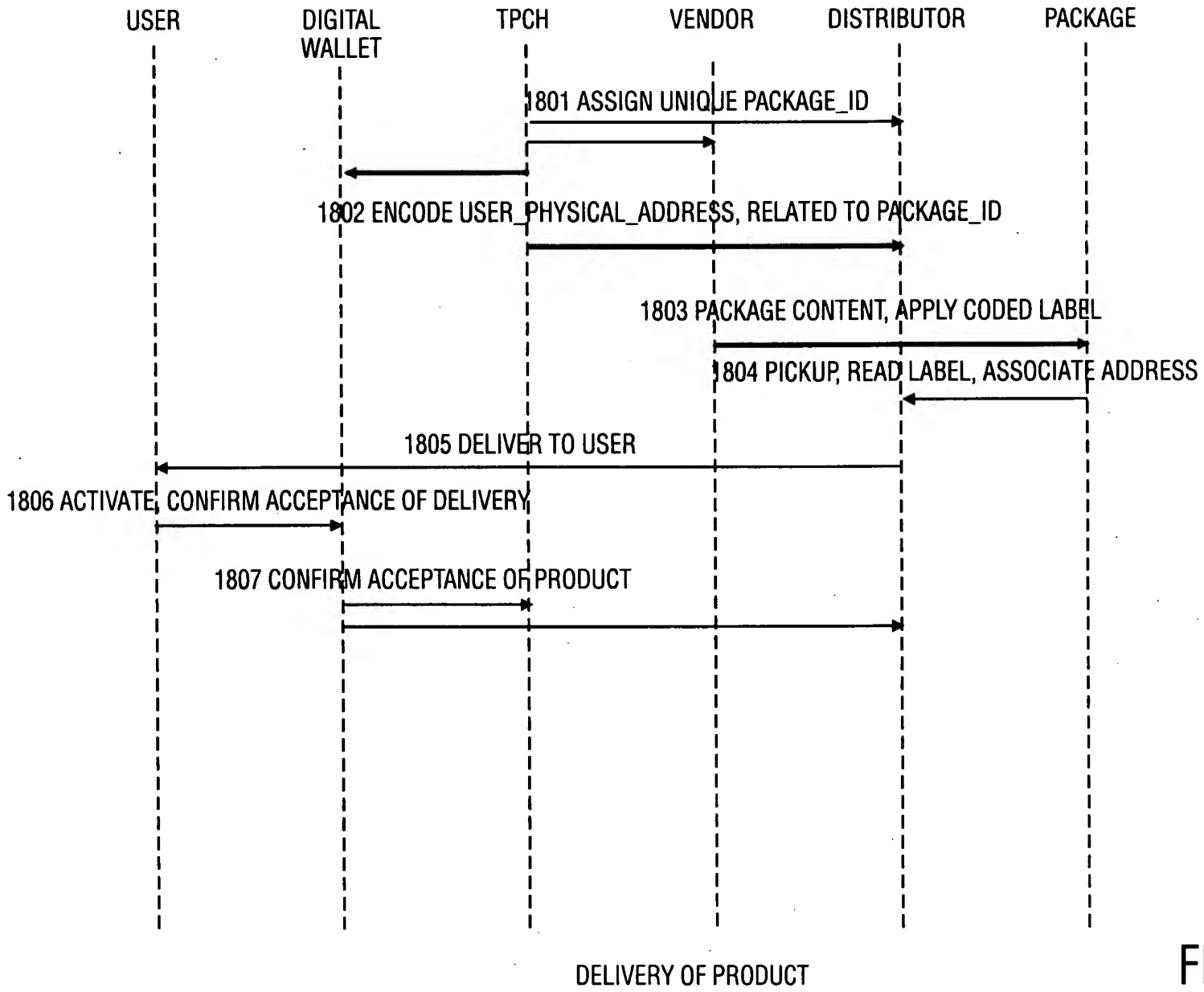


FIG. 18

T06250 "62B4E260

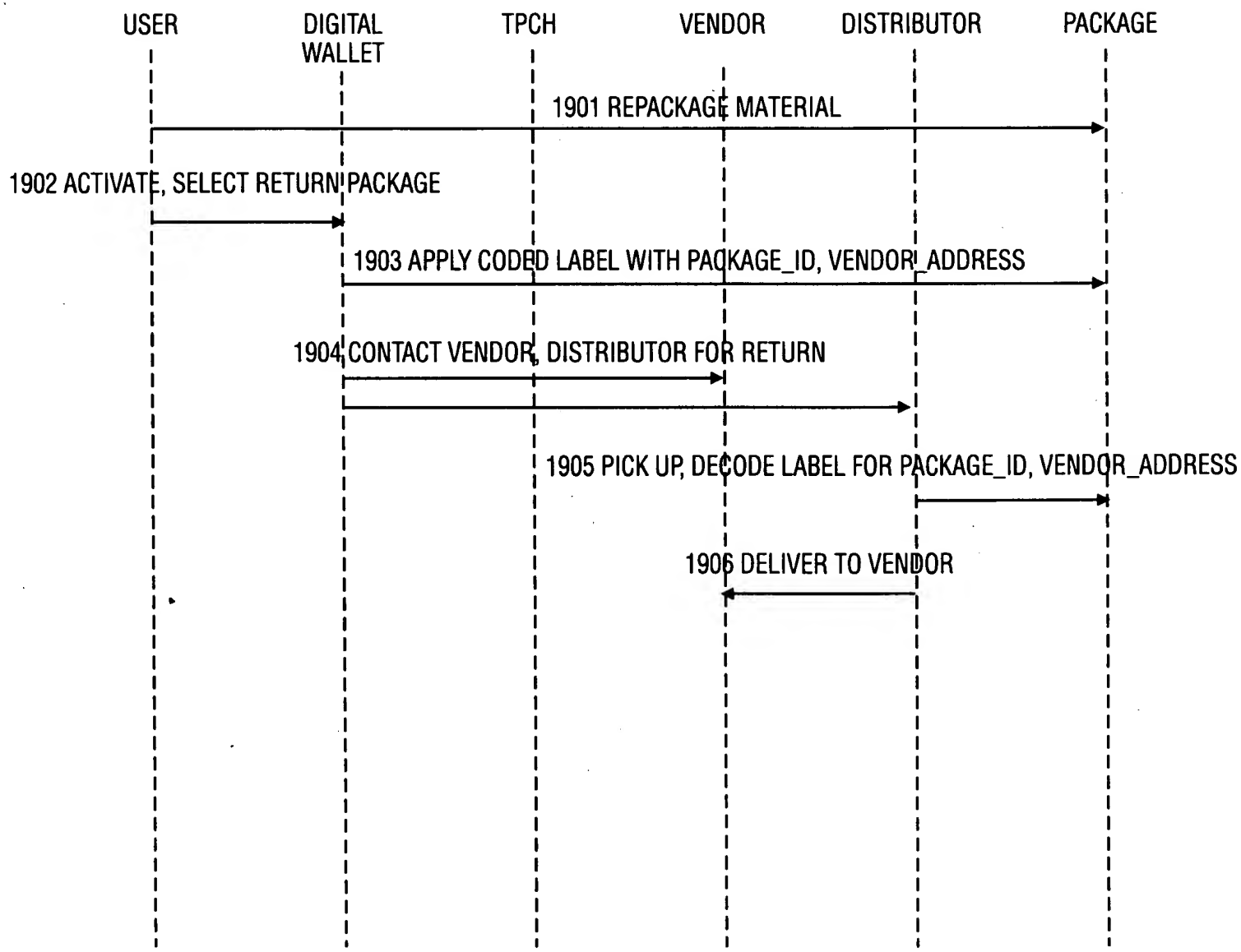


FIG. 19

T06250 "6EBHE260

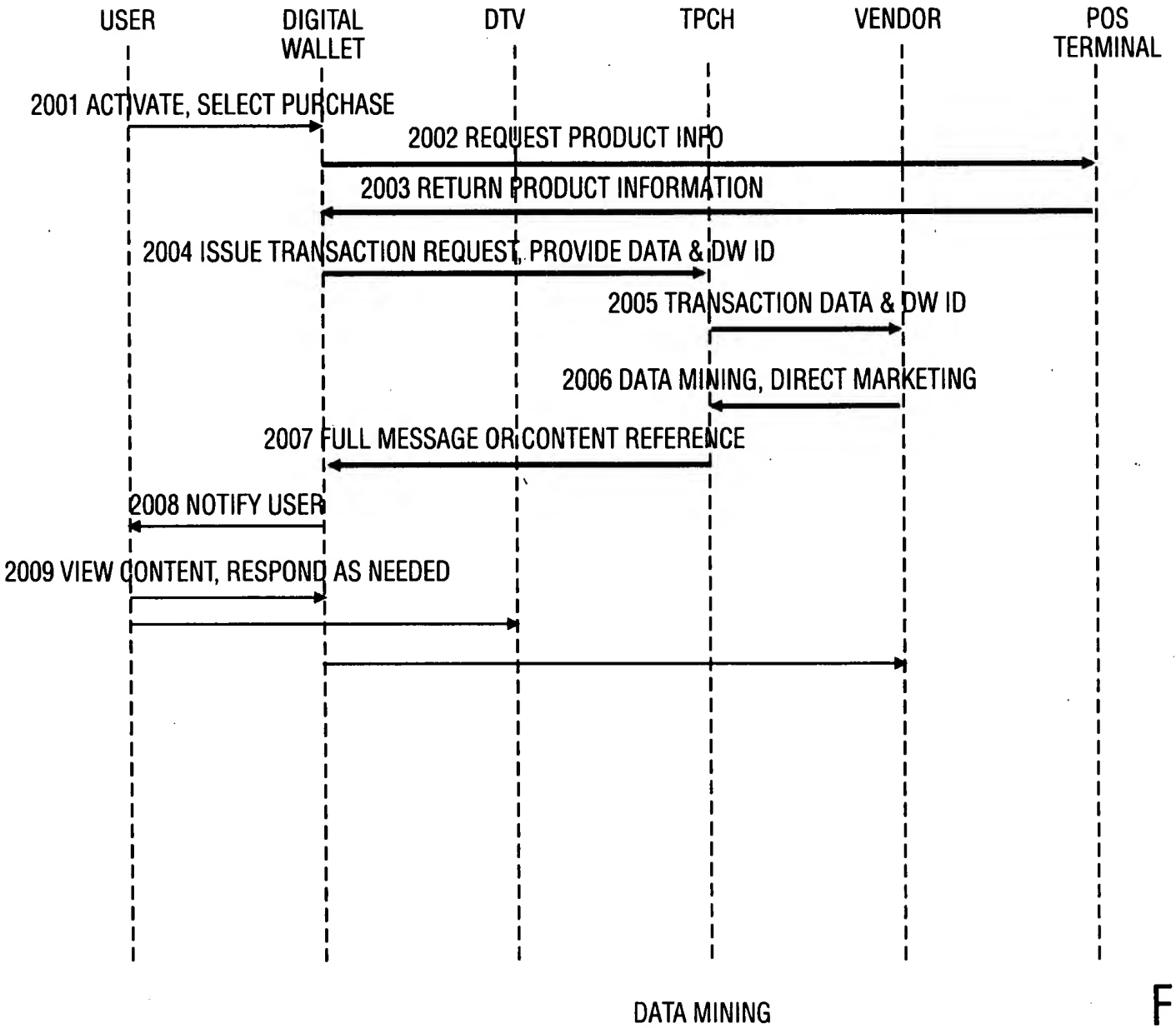


FIG. 20

T06250 "6E8nE260

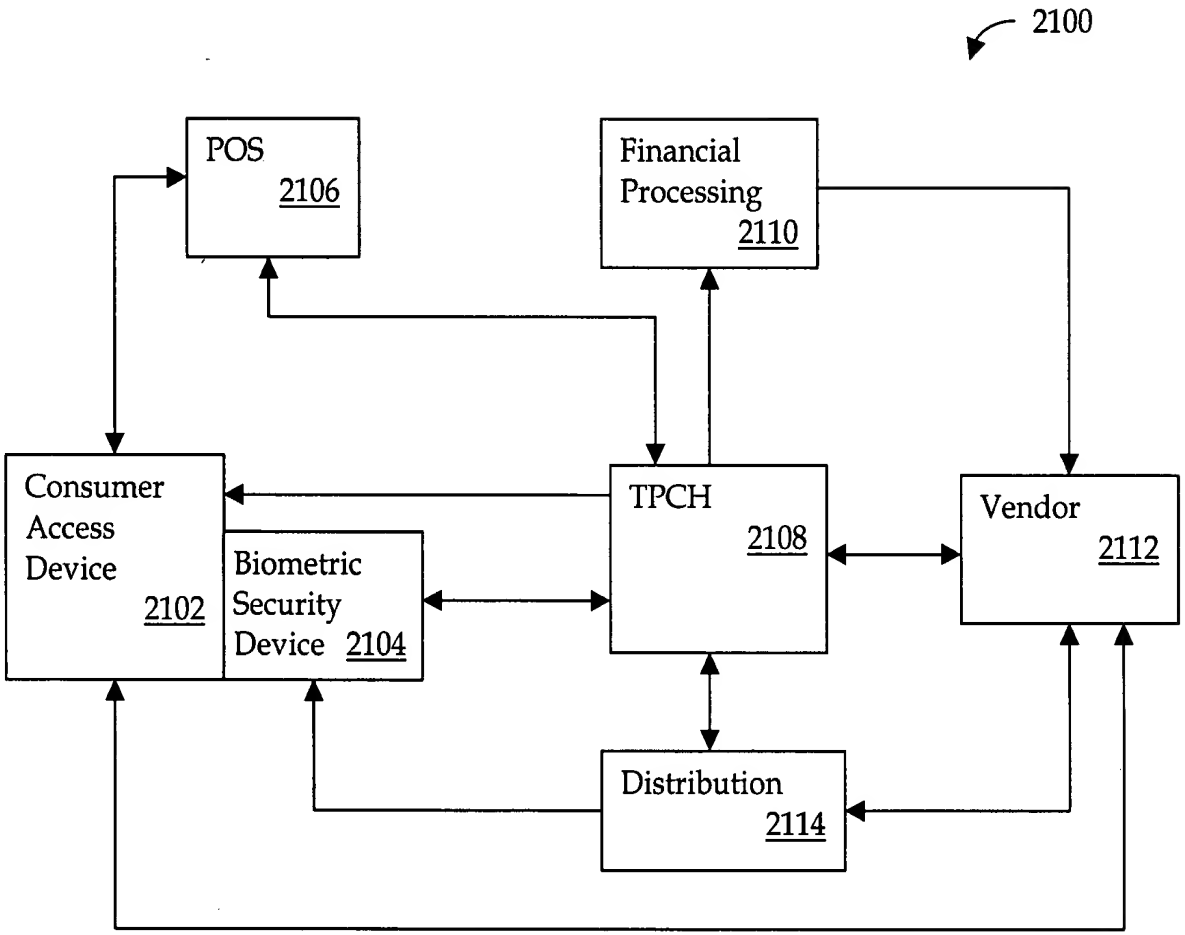


FIG. 21

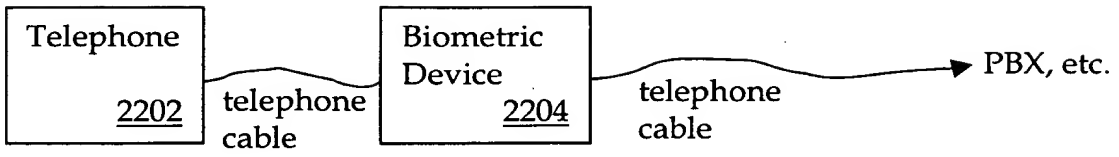


FIG. 22

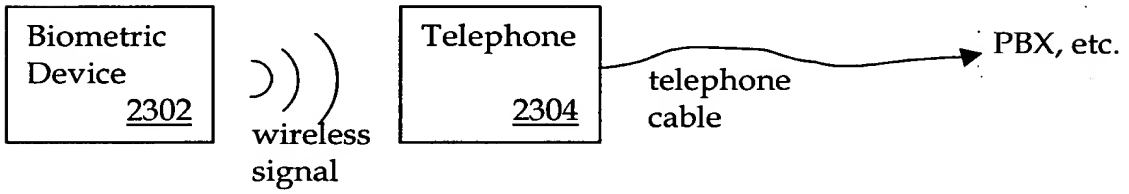


FIG. 23

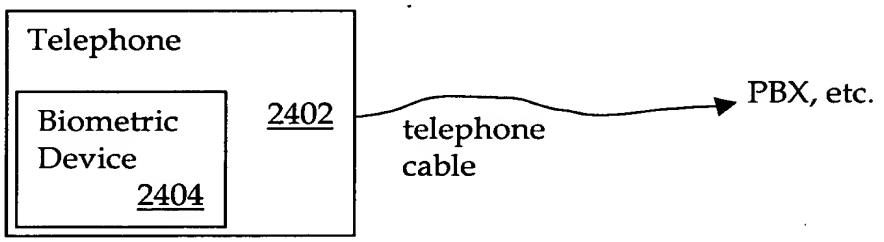


FIG. 24

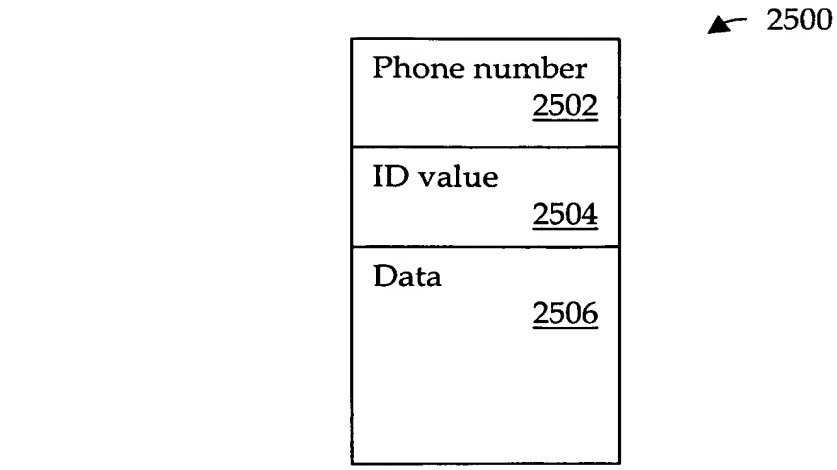

2500
Phone number
2502
ID value
2504
Data
2506

FIG. 25

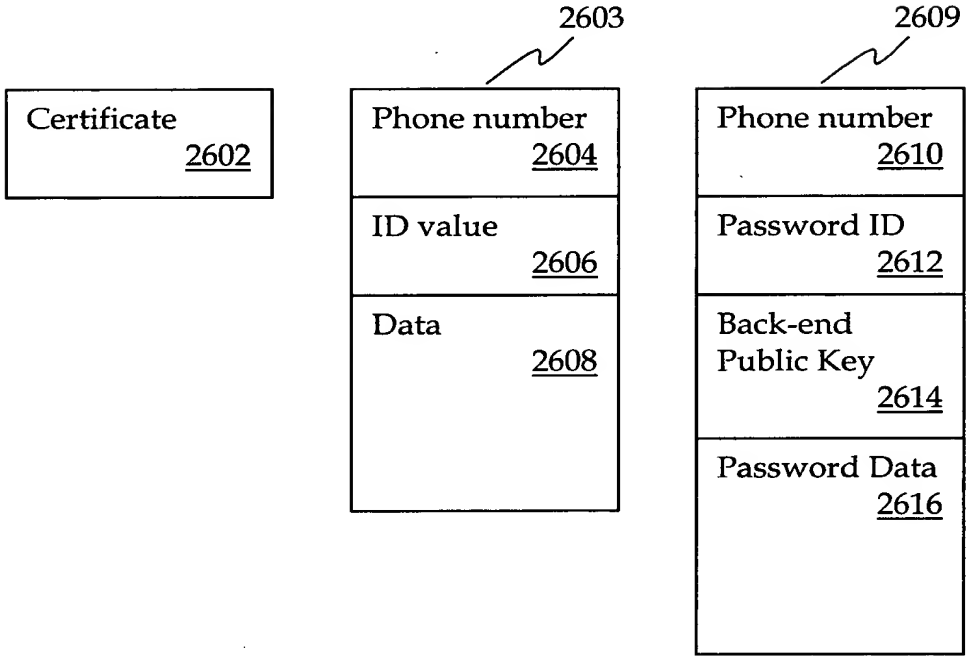

2603
2609
Certificate
2602
Phone number
2604
ID value
2606
Data
2608
Phone number
2610
Password ID
2612
Back-end
Public Key
2614
Password Data
2616

FIG. 26

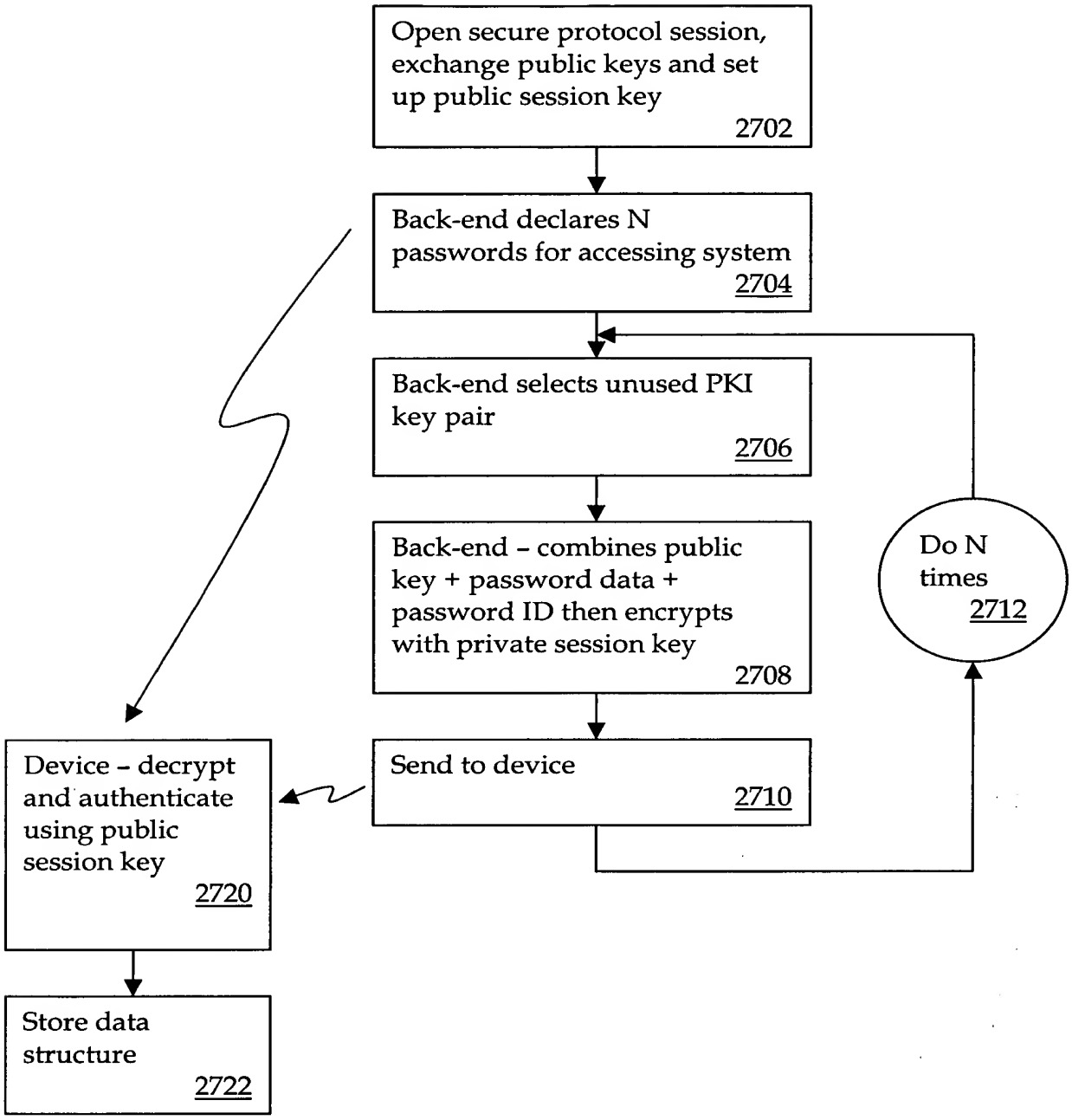

Open secure protocol session, exchange public keys and set up public session key
2702
Back-end declares N passwords for accessing system
2704
Back-end selects unused PKI key pair
2706
Back-end – combines public key + password data + password ID then encrypts with private session key
2708
Send to device
2710
Do N times
2712
Device – decrypt and authenticate using public session key
2720
Store data structure
2722

FIG. 27

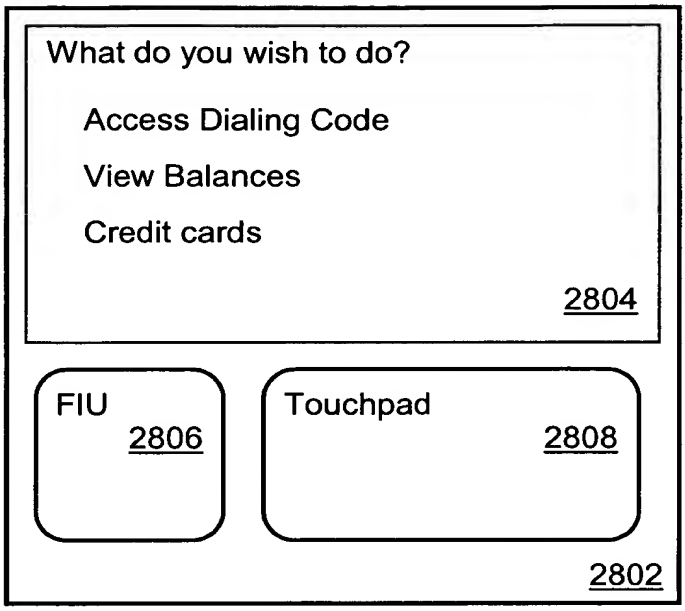

What do you wish to do?
Access Dialing Code
View Balances
Credit cards
2804
FIU
2806
Touchpad
2808
2802

FIG. 28

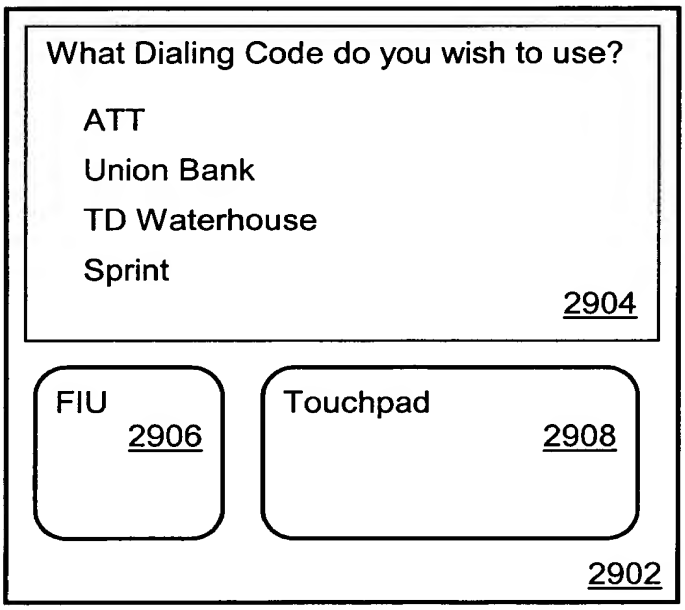

What Dialing Code do you wish to use?
ATT
Union Bank
TD Waterhouse
Sprint
2904
FIU
2906
Touchpad
2908
2902

FIG. 29

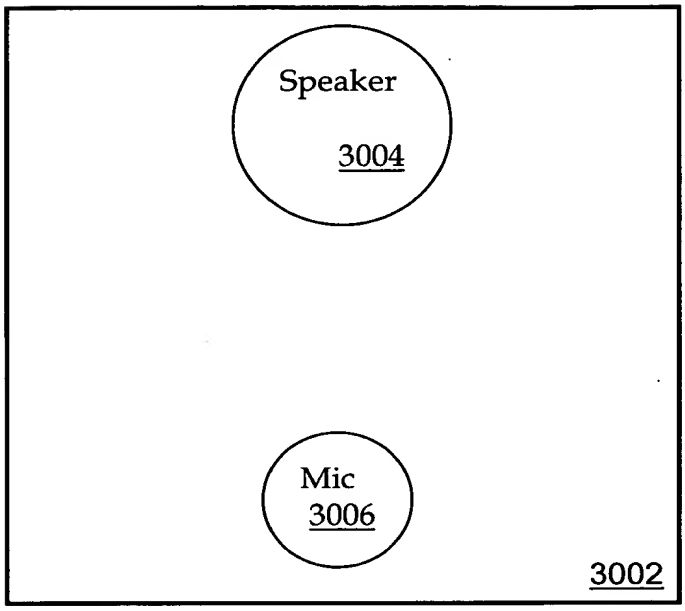


FIG. 30

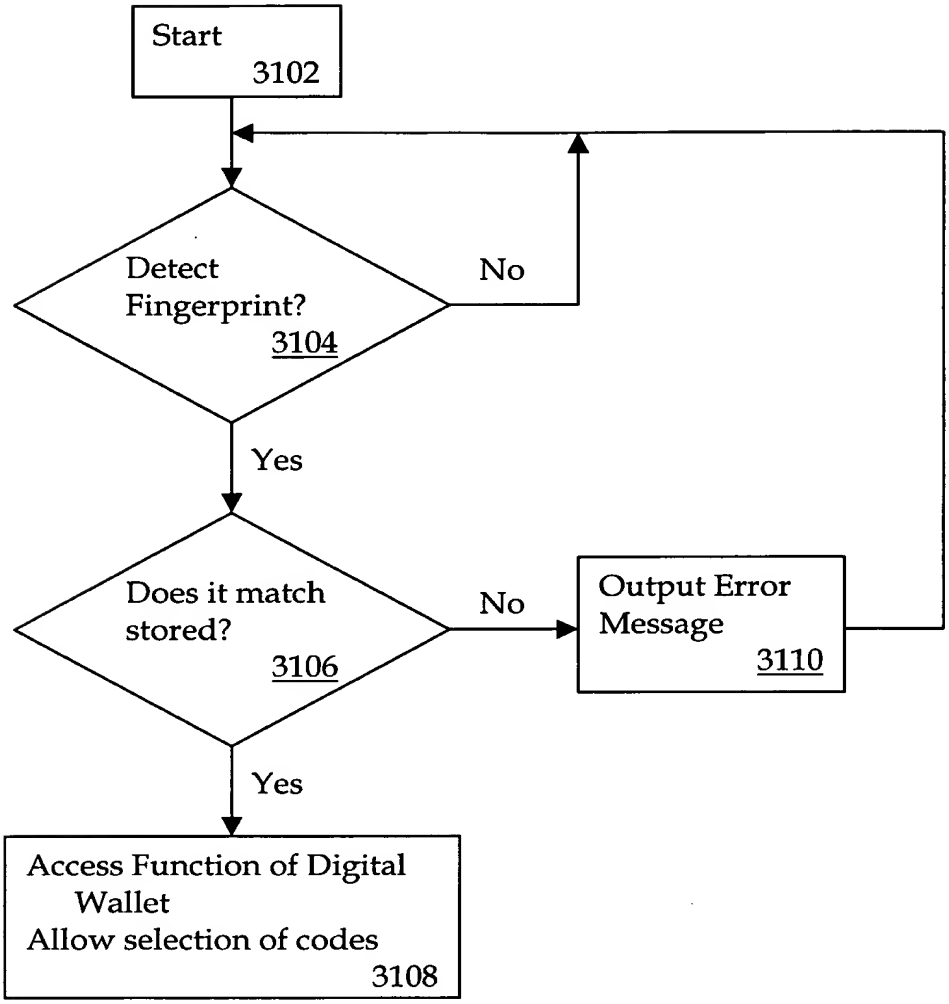

Start
3102
Detect Fingerprint?
3104
No
Yes
Does it match stored?
3106
No
Output Error Message
3110
Yes
Access Function of Digital Wallet
Allow selection of codes
3108

FIG. 31

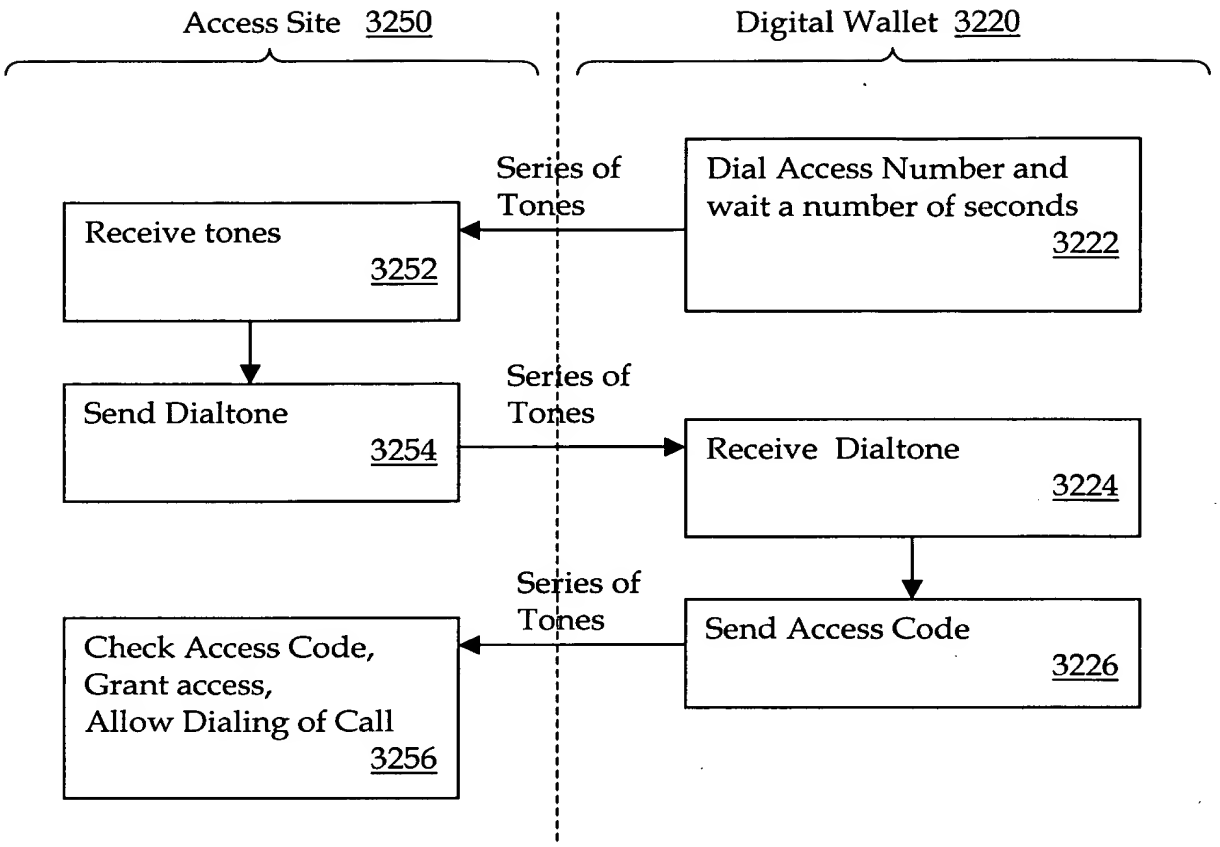

Access Site 3250
Digital Wallet 3220
Series of Tones
Dial Access Number and wait a number of seconds 3222
Receive tones 3252
Send Dialtone 3254
Series of Tones
Receive Dialtone 3224
Series of Tones
Send Access Code 3226
Check Access Code, Grant access, Allow Dialing of Call 3256

FIG. 32

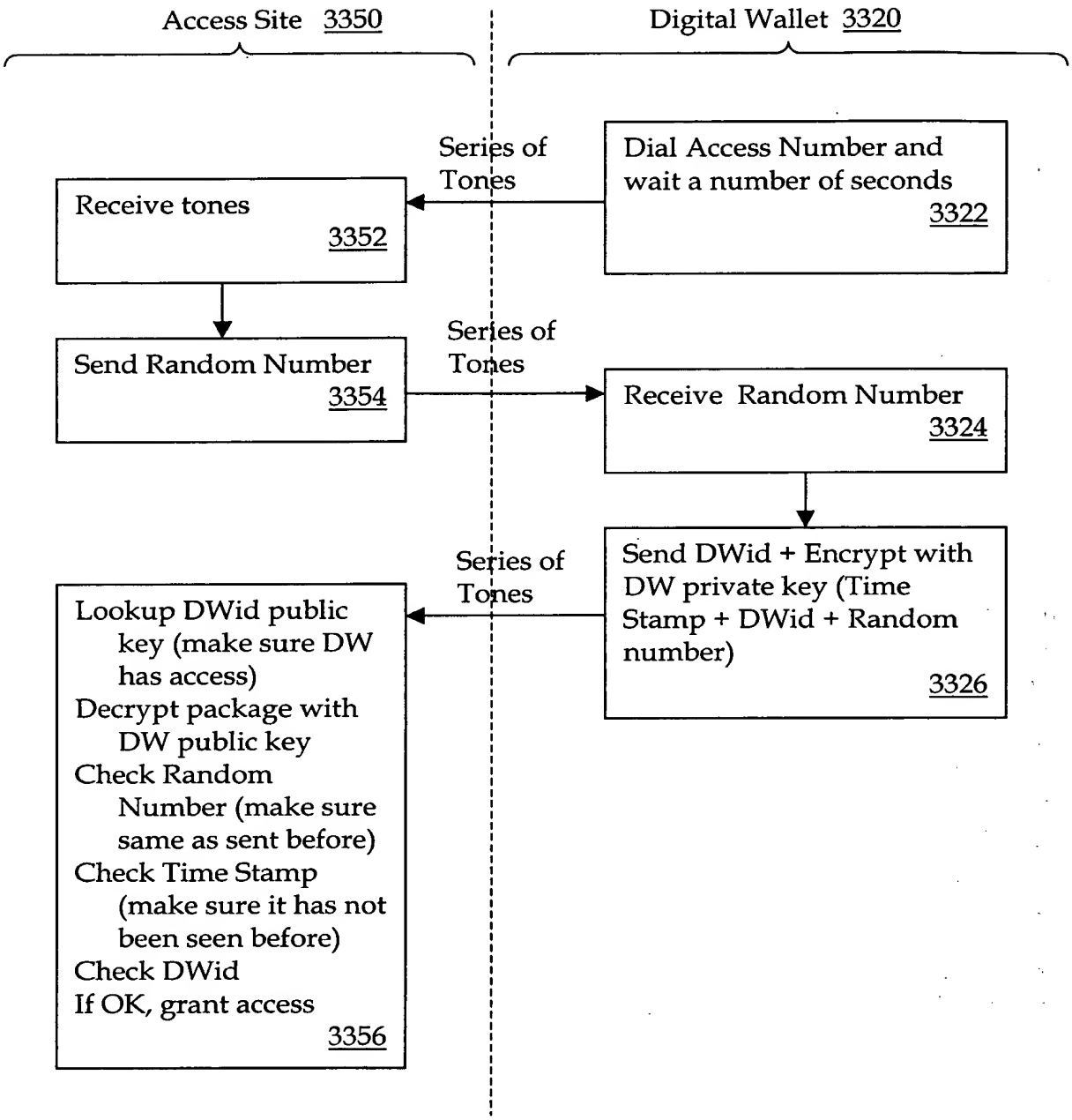

Access Site 3350
Digital Wallet 3320
Dial Access Number and wait a number of seconds
3322
Series of Tones
Receive tones
3352
Send Random Number
3354
Series of Tones
Receive Random Number
3324
Send DWid + Encrypt with DW private key (Time Stamp + DWid + Random number)
3326
Series of Tones
Lookup DWid public key (make sure DW has access)
Decrypt package with DW public key
Check Random Number (make sure same as sent before)
Check Time Stamp (make sure it has not been seen before)
Check DWid
If OK, grant access
3356

FIG. 33